Top Incomes in Chile 1957-2007: Evolution and Mobility[1]

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Abstract

Using household surveys that cover more than 50 years of the political and economic history of Chile, we investigate changes in the shape and in the composition of the distribution of income in Chile, in particular of top 10 % and top 1% incomes. In line with international evidence top income concentration appears to be countercyclical in the short run. For the entire length of this survey, this concentration shows roughly an inverted U-shape, peaking at the end of the 80s. These changes correspond approximately with different economic models prevailing in Chile. We observe important changes in the composition of top income groups related to greater relative importance of women, employees and college schooling levels. These changes are stronger for the top 10% than the top 1% of incomes. Additionally, using a national level panel of households for the period 1996-2006 we explore correlations between probabilities of permanence and arrival to the top decile with variables such as composition of the household, ownership of physical and human assets, job quality and active persons in the labor market.

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1. Introduction

A new and important literature has developed in recent years to study the evolution of top incomes in several developed countries. It is argued that an income distribution more concentrated at the top has significant implications for the economy and politics. Leigh (2009) argues that if a small elite gets a big share of society's income, it could influence certain industries and, through their campaign contributions, certain politicians. Moreover, Frank (2007) notes that the increase in spending of high income individuals can affect the middle class because a contagion effect on the rest of the population. He argues that the welfare evaluation depends on context, and therefore consumption choices also depend on the comparison made by the individual with respect to those around him. Finally, understanding the concentration of incomes at the top of distribution tells us something about the bottom part of it, moreover, the concentration of income at the top is highly correlated with relative poverty (Tawney, 1913).

The international literature has developed this research by building long time series of top income shares, during the twentieth century. This includes Piketty (2003), Piketty and Saez (2006), Atkinson (2002), Saez and Veall (2005), Atkinson and Leigh (2005, 2007), Atkinson and Piketty (2007), Atkinson and Salverda (2005), Banerjee and Piketty (2005) among others. On the other hand, Saez and Veall (2005) and Kopczuk, Saez and Song (2007) have also studied the welfare consequences of income mobility, and the effect of the increase in female labor participation.

Our work seeks to contribute to the debate on the income distribution in Chile studying, first of all, the evolution of top income shares in Chile and the composition of this group during the last 50 years. Second, the use of panel data will allow us to study income mobility at the top of the distribution in recent years. The available information allows us to study the evolution of top incomes shares, distinguishing between individual and family income, and hence to investigate if the increase of female participation rate in the

labor market has contributed to greater income concentration due to the interrelation between spouses' income.

This research is unprecedented in Chile. This study aims to obtain a comprehensive analysis and allows conclusions about the behavior of high incomes. To study the evolution of top incomes in the last 50 years we use the Employment and Unemployment Survey of the University of Chile. This survey contains considerable information about incomes for a sample of households in Greater Santiago between 1957 even today. With this information the following indicators are constructed: average real income of decile 10, the percentile 1, percentiles 10 to 2, growth of those average incomes, participation relative to the entire revenue of every year, distances between average income and decile 10's average income and others. All these indicators are constructed for both household and individual incomes. Additionally, we analyze their composition in terms of wages and other income, education, gender and types of occupation.

In turn, for the analysis of mobility in decile 10, we use CASEN panel surveys. This allows us to study transitions in the upper part of the distribution, answering the question of what is the probability of remaining in decile 10 and the probability of arriving to the top decile 10. Moreover, the wealth of information readily available in household surveys allows us to study the variables correlated with the probability of remaining in decile 10 and of arrival to decile 10, using initial conditions as explanatory variables, including household composition variables, household assets and shocks.

2. Literature Review

A review of recent literature is available in Saez (2004), Piketty and Saez (2006) and Leigh (2009). Series of top incomes have been produced for various developed countries, including Australia (Atkinson and Leigh, 2007), Canada (Saez and Veall, 2005), Finland (Riihelä, Sullström and Tuomala, 2005), France (Piketty, 2003), Germany (Dell, 2007), Ireland (Nolan, 2007), Japan (Moriguchi and Saez, 2008), Holland (Atkinson and Salverda, 2005), New Zealand (Atkinson and Leigh, 2005), Spain

(Alvaredo and Saez, 2006) Switzerland (Dell 2005, Dell, Piketty and Saez, 2007), United Kingdom (Atkinson, 2002, 2007) and U.S. (Piketty and Saez, 2003).

Piketty (2004) and Legih (2009) emphasize that international comparisons find a significant decrease in top income share during the first half of the twentieth century in all countries except Switzerland, with a later increase of this shares in the second part of the century, mainly in Anglo-Saxon countries but not in Japan and continental Europe. Indeed, top income shares make a full recovery in the U.S., a significant one in England and Canada and none in France. This fall in the first part is attributed to the incorporation of highly progressive tax systems after the Second World War and the subsequent growing importance of salaries in the composition of top incomes, which in turn have won profitability due to technological progress. Moreover, Leigh (2009) noted that differences between countries are not due to institutional differences in the labor market, such as levels of centralization of collective bargaining.

Atkinson (2002) studies the evolution of top incomes in the United Kingdom. In his research advances beyond what previous authors had developed for the UK since it tries to identify the amount of aggregate income and aggregate population and argues that his data is a unique source of evidence on the distribution of higher incomes and that it allows him to cover the twentieth century. That paper shows that the First and Second World Wars conveyed a significant drop in the income shares of the top 0.05% and 1% incomes. Piketty (2003), in turn, studies the same series for France. In particular, he concludes that the decline in France of income inequality is largely accidental.

For the United States, Piketty and Saez (2003) work with a database with information about the concentration of wealth and income. They acknowledge that working with this type of information has important limitations. In particular they mention that their long term series have little information on the bottom incomes, but because of being homogeneous across the countries and decomposed in different income sources, they are the only opportunity to understand the dynamics of the distributions of income and wealth. They mention that the general pattern ,across the century, for decil 10's income

has a U shape, and that it experienced a substantial decrease, greater than 30% during WWII, and that remained above 31 and 32 per cent until 1970. After decades of stability in the post-war period, the share of the richest decile increased dramatically on the last 25 years, reaching its pre-War levels, but with a different composition in which the labor income is now the main income source.

Additionally, Saez and Veall (2005) studied the evolution of high-income families and individuals, concluding the historical evolution of both series follow the same pattern. This indicates that in spite of increasing incorporation of women into the labor market, this does not improve or deteriorate the concentration of incomes, probably due to the correlation between the earnings of spouses. They also study the consequences in terms of welfare for income mobility. They find that there has been an increase in mobility in Canada at the top of the income distribution.

In each of the works mentioned the methodology is very similar, and so are the main conclusions, apparently because developed countries have followed the same trend in the implementation of tax policies. For example, Piketty (2003) argues that many authors have said that the dramatic increase in progressive taxation taking place in the interwar period has been the main factor that preventing income and wealth shares return to their previously high levels. This taxation trend would explain also the generally observed decrease in the relative importance of capital revenues and an increase in the relative importance of labor income as determinant of total income, at least in recent decades.

Most of top income studies have made use of tax data. Saez (2004) argues that surveys information is available only in the recent years and that, at least in the United States, the household surveys present information on codified form or by stretches. On the other hand, tax data also suffer from certain problems. First of all, income information is based on self-reported information, therefore problems of evasion and elusion can slant the results. Second, taxes statistics cover only a fraction of the population. Historically, the fraction of the population who declares income is low there is a big part that is exempt of

it or where informality conditions prevail in the labor market. These facts are especially important in the case of Chile.

For this research, we maintain that the use of household surveys allows us to address these issues. First, the extraordinary series of 50 years of the Employment and Unemployment Survey allows us to circumvent the issue of short lengths of time. Second, income data is captured as a continuous variable, and not coded into income sections. Also the information in the survey registers the identity of income sources and whether they are individual or family figures. Third, household incomes in the surveys may come from informal mechanisms or be exempt from taxes.

3. **Data and Methodology**

Regarding the analysis of the evolution of top incomes we use the Employment and Unemployment Survey of the University of Chile. This is the oldest survey available in Chile and has rich information on the income of households in Greater Santiago from 1957 up to current date. In addition to the long time path, one of the great advantages is its homogeneity, as the survey format has remained virtually the same over all these years, the information is similar throughout the period, and therefore it facilitates making valid comparisons over time.

This survey allows us to distinguish between total household income, individual income and per capita household income. Figure 1 shows the monthly per capita GDP between 1957 and 2004 taken from Diaz, Luders, and Wagner (2007) and per capita household income from the Employment and Unemployment Survey of the University of Chile. Both series are in real Chilean pesos. We can observe a similar trend in both series. However, the income measure from the survey is below the range of the GDP. There are several reasons for that. Fist, GDP includes production activities than are carried out within the boundaries of the country that are not a property of nationals. Second, the

Survey includes only income from Greater Santiago and GDP is a national measure. In the Appendix we show the table underlying this chart and also a comparison between individual and total income of the household. Incomes from the survey were corrected by CPI to be left in real Chilean pesos, and moreover, the different currencies used during the period of study were made equivalent. The sample corresponds to about 10,000 people and 5,000 households on average per year.

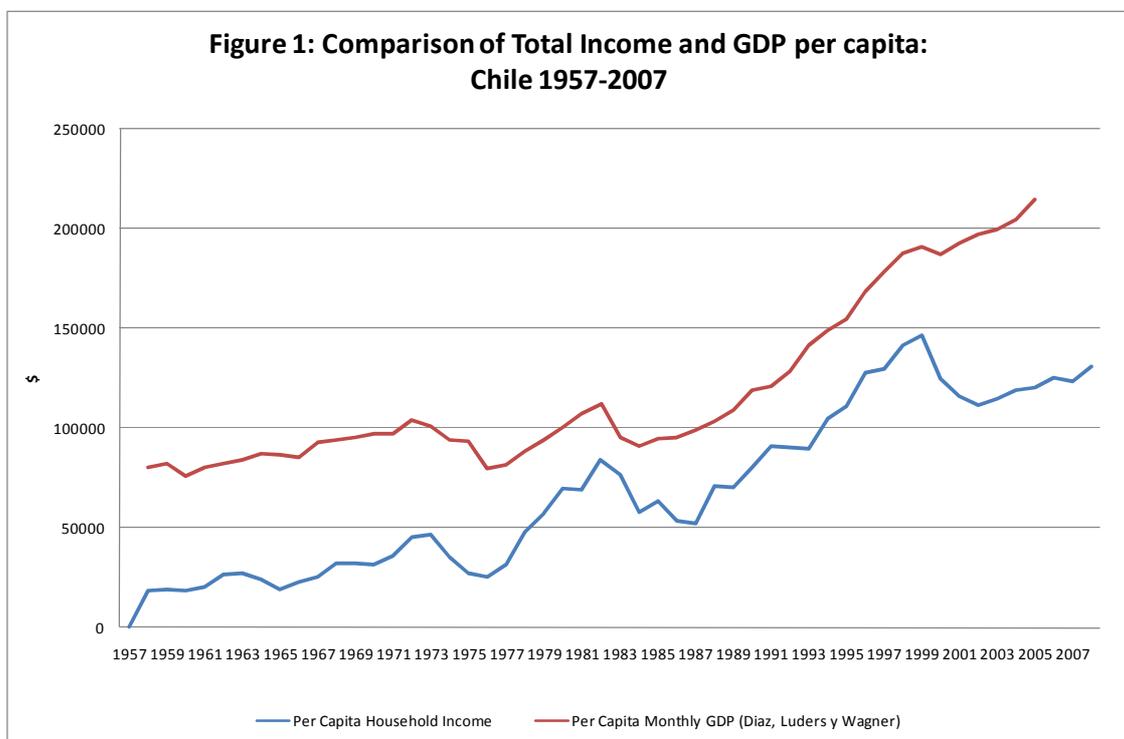Figure 1: Comparison of Total Income and GDP per capita: Chile 1957-2007

Table 1 shows some descriptive statistics for the year 2007. We focus on the decile 10 and the 99th percentile of income distribution. We see that the average household income was 511,929 Chilean pesos (930 dollars). The median on the other hand, is 338,929 (615 dollars). In the case of income distributions with a long tail, the median is a better indicator of mean income than the average income. Moreover, the average total household income in decile 10 is 1,895,859 Chilean pesos (3,450 dollars), and the richest 1% of 4,333,647 Chilean pesos (7,880 dollars). The minimum household income of

decile 10 is 1,060,429 (1,930 dollars) and the minimum household income of percentile 99 is 3,305,993 (6,010 dollars). This shows the great gap between incomes of the richest deciles and average households in Chile.

Table 1: Average Income Thresholds and Top 10% and Top 1%, Chile, 2007						
	Average Population	Mediana	Average top 10%	Average top 1%	p90	p99
Total Household Income	511,929	338,969	1,895,859	4,333,647	1,060,429	3,305,993
Individual Income	246,201	157,767	1,028,191	2,948,340	518,915	1,740,877
Per Capita Household Incom	130,713	82,357	315,574	1,254,873	273,407	841,144

Source: Employment and Unemployment Survey, Universidad de Chile, 2007. 8,870 individuals. 4,934 households.

Income proportions were calculated using as a numerator the sum of incomes of all individuals or households in decile 10 (and top 1 %), divided by the sum of the income of all individuals or households in the sample. Another way of doing it would be to use as denominator the monthly GDP of the country. Nevertheless, as we said that previously this one includes incomes that are not a property of nationals. In case of the individual income they include only the income of individuals who work or have personal individual revenue.

On the other hand, the survey has information on the sources of individual income. This allows us to distinguish the differences in the evolution of the different sources for top incomes: wages, capital gains or other incomes. Income is divided in the following way: i) salaries and wages, ii) independent income, originated from industrial, agricultural, commercial and professional activities, iii) pensions and iv) other incomes, which includes capital revenues in addition to other non welfare income. We also take other individual information, such as the type of occupation and gender.

To perform mobility analysis in the high part of the income distribution, however, we need longitudinal information. The survey panel that covers the longest time period in Chile is the survey Panel CASEN 1996-2006. Using three periods of the survey we calculate matrices of mobility for the top decile between 1996-2001 and 2001-2006. Also, we estimate two models of discreet dependent variable in which we identify

variables correlated with the probability of permanence in the decile 10 from the rest of the distribution and variables correlated with the probability of arrival to the 10th decile.

The permanence in the top decile is studied by means of the construction of a discreet variable that takes the value of 1 if the household is observed in the 10th decile in year t conditional on being in decile 10 in year t-1, and 0 if person is not observed in decile 10 in year t conditional on being in decile 10 in year t-1. The model incorporates characteristics of the household in year t-1, and changes produced between t-1 and t.

For the case of arriving to the decile 10 we generate a discreet variable that take the value of 1 if the household is observed in decile 10 in year t conditional on been in decile 10 in year t-1, and 0 if the household is not observed in decile 10 in year t conditional on not been in decile 10 in year t-1. The model incorporates characteristics of the household in year t-1, and changes produced between t-1 and t.

The explanatory variables for both models include composition of the household, physical and human capital, household's geographic characteristics and shocks. Shocks include health problems, changes of the numbers of persons in the household, and changes of the number of persons in the household that work.


4. Top Incomes Evolution in Chile

Graph 2 shows the proportion of the household income for the top decile in Chile between 1957 and 2007. Just like the available evidence for other countries has suggested elsewhere, the behavior of this series appears to be countercyclical. During economic crisis, for example during the crisis of 1982, the population's elite who enjoy major capital endowment will increase his economic differences with those more disadvantaged. On the other hand, during periods of economic expansions as that it happened from 1987 up to 1996, the participation of decile 10 was diminishing. When the country began to slow down its economic growth, the income share of the rich began rising again. The evidence suggests that for periods of rapid economic growth wage gaps tends to diminish and the opposite case happened in periods of slower or negative

economic growth, therefore the richest sector of the population has a major participation in the series of proportion of income when the country is in periods of economic difficulty. Also we can observe a inverted-U shape for top income shares in the period of study, which reaches a maximum at the end of the 80s.

Figure 3 shows the series for the p90-95, p95-99 and p99-100. We note that in periods of growth the top decile was primarily due to growth in the richest part of the top decile: p95-99 and p99 -100. The indicator for p90-95 percentile even decreases gradually in the period under study. This shows that the concentration in the upper part of the distribution is mainly determined by what happens in the richest 5%.

Figure 2: Proportion of Income Decile 10

**Figure 3: Proportion of Income p90-95, p95-99, p99-100**
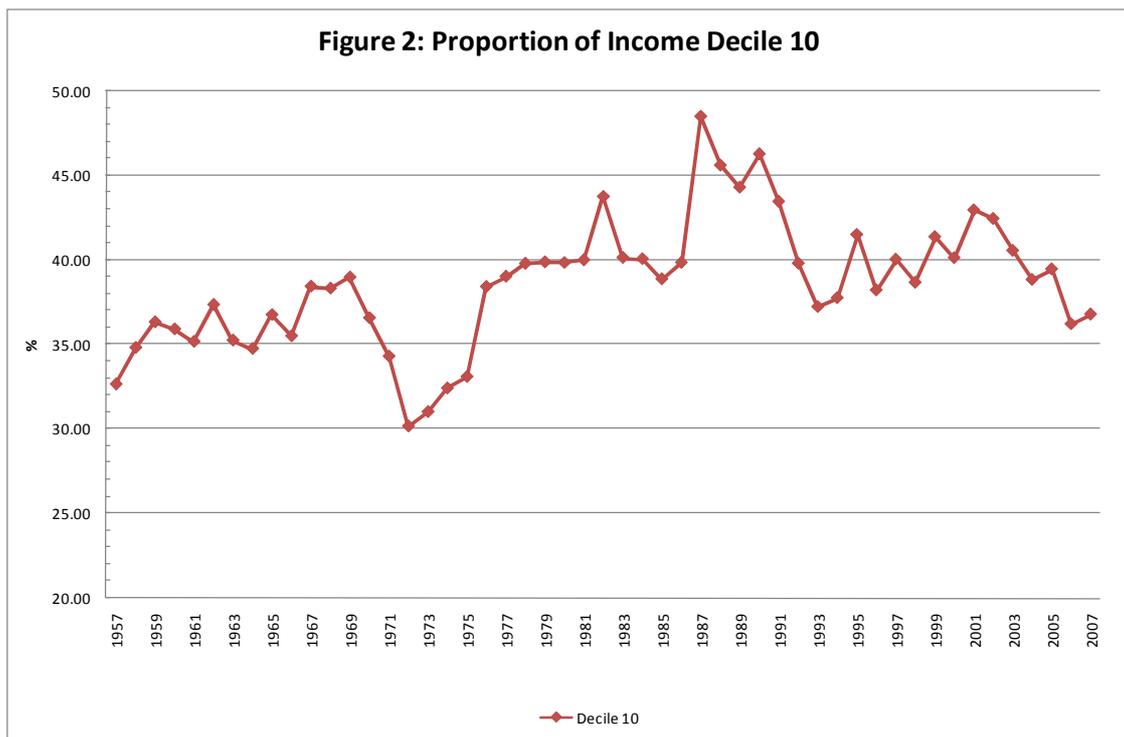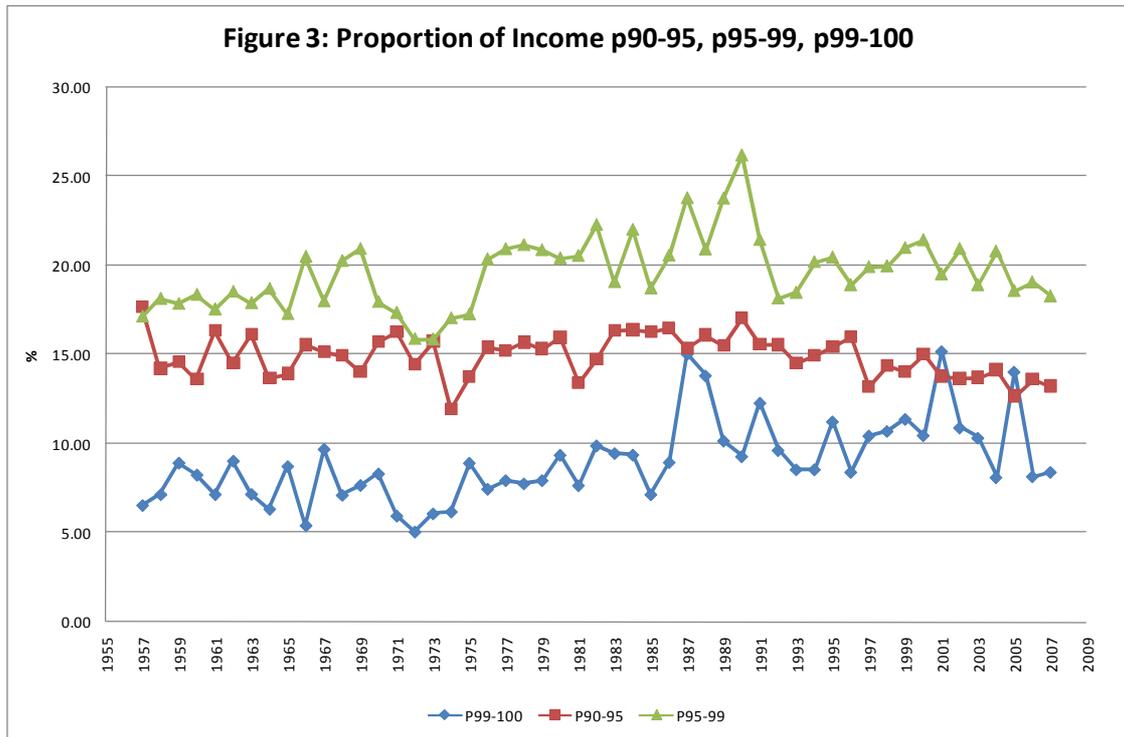
Total Household Income, Per Capita Family Income and Individual Income

In this section we present the income share of the top decile and the top percentile using total household income, per capita household income and individual income.

Changes in labor force participation of married women may have increased the income of the top of the distribution measured as family income and not necessarily for individual income. We therefore compare both series. Figure 4 shows this comparison. In addition, per capita family income allows us to incorporate the effects of household size. As households in the richest deciles have less people when we calculate the proportion of income using per capita household income will observe higher percentages. Figure 5 shows this comparison.

We note that this conjecture is true for some periods but not for the first time period being studied or for when there is a drop in the income share. This suggests that no

significant changes are observed whether we use total household income, per capita household income or individual income. Figure 5 shows the comparison of the types of income for the proportion of income percentile 99-100. We notice a similar pattern in all three series.

Figure 4: Proportion of Income Decile 10
Individual Income vs Total Household Income
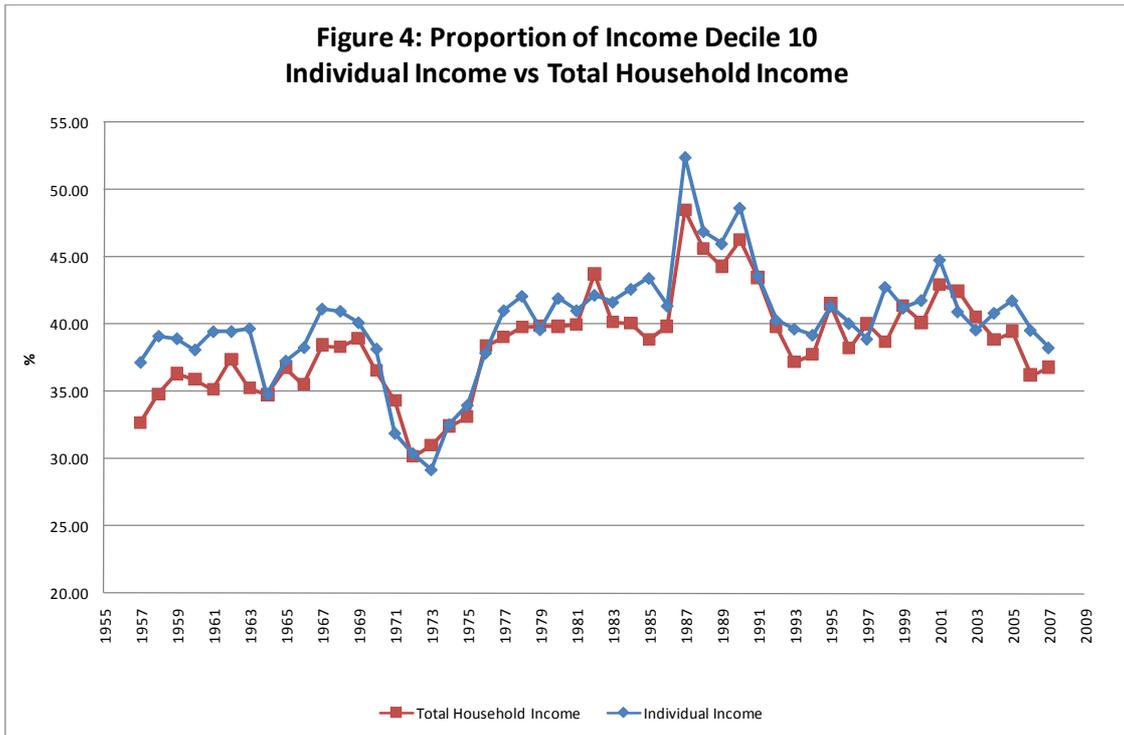
Figure 5: Proportion of Income Decile 10
Total Household Income vs Per Capita Household Income

Total Household Income — Per Capita Household Income
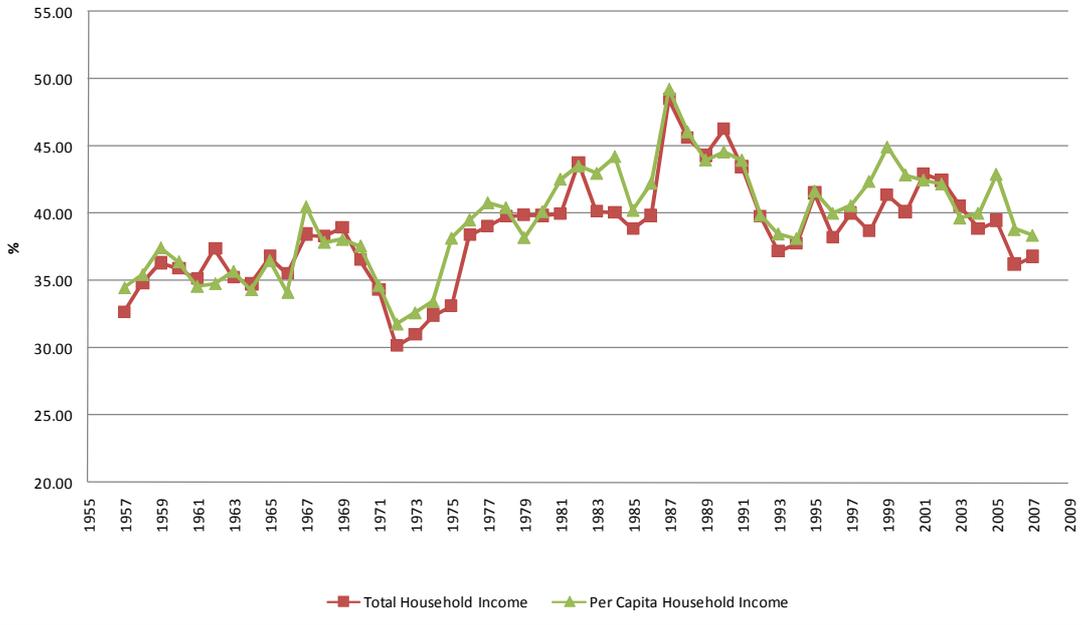
Figure 6: Proportion P99-100
Comparison Total Household Income, Per Capita Household Income, Individual Income

Total Household Income — Per Capita Household Income — Individual Income
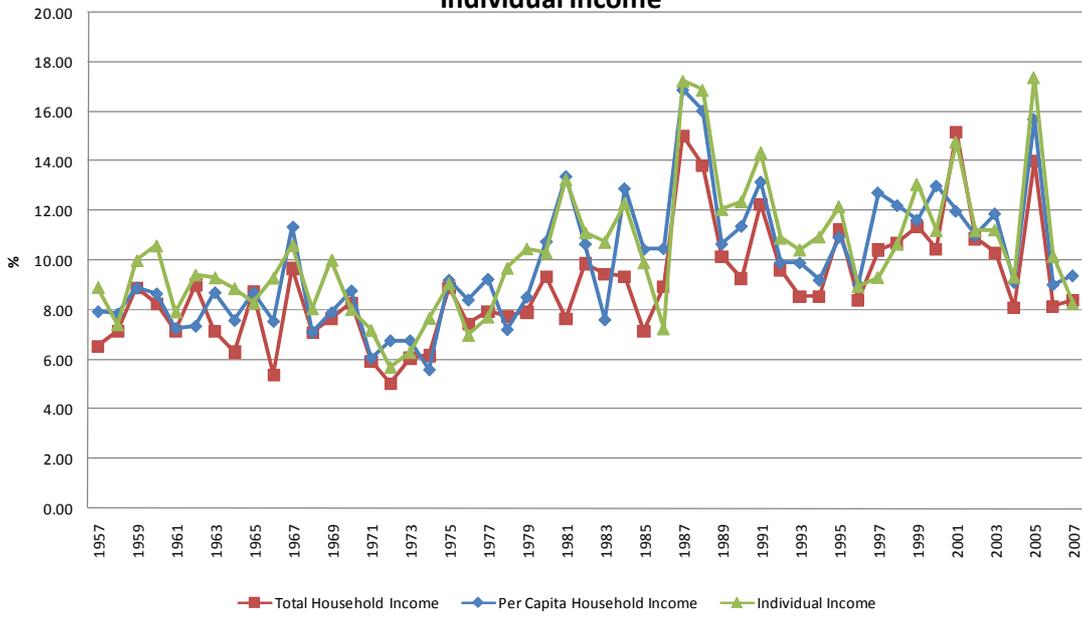
Income Composition

One big advantage that gives us the survey is to decompose the income of individuals in their different sources of origin: i) salaries and wages, ii) independent income from industrial activities, agricultural, commercial and professional iii) retirement and iv) other income, which includes the capital rental income plus other income not specified.

The decomposition was carried out on individual income. Figure 7 shows the series for the top decile. Most of the incomes of individuals are from wages; this proportion has increased steadily over time. The evolution of independent income, which may include income from holding any capital or business, shows a downward trend.

In the same way we show the composition of income for the richest 1% of the sample. We note that, for this small segment of the population, its composition behaves differently than the top decile, obtaining most of its income in the form of independent income from holding any capital or business
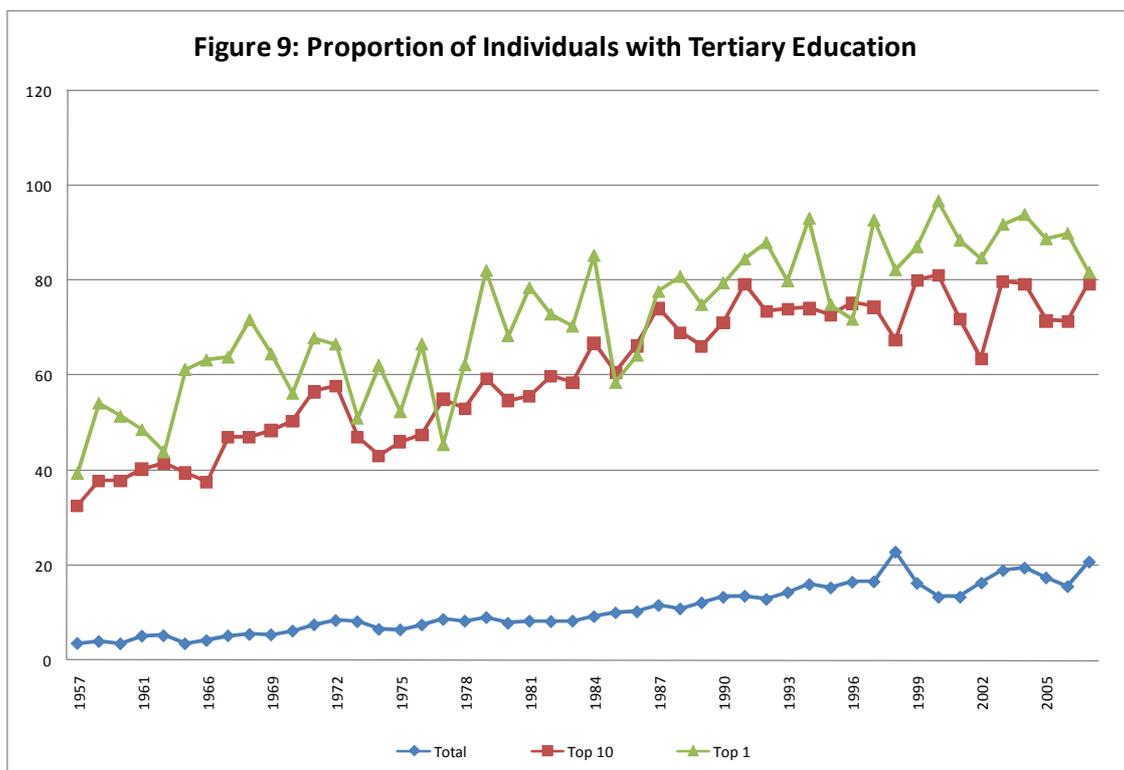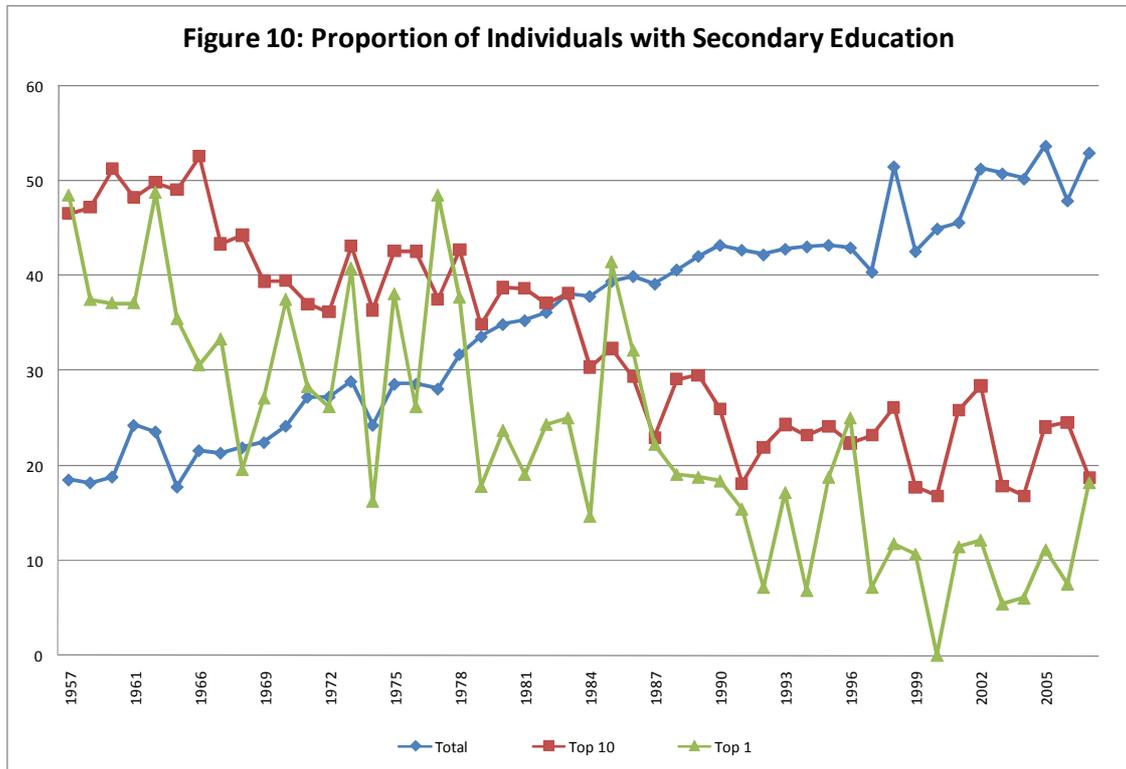

Figure 7: Sources of Income in Decile 10

Figure 8: Sources of Income in P99-100
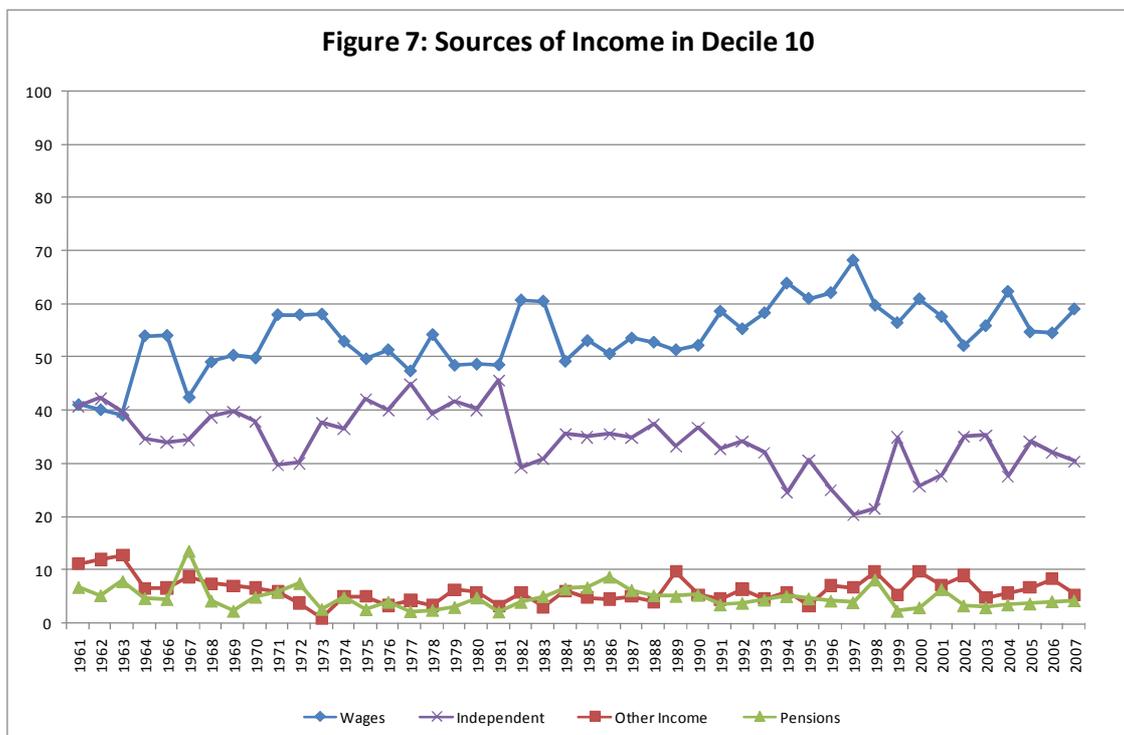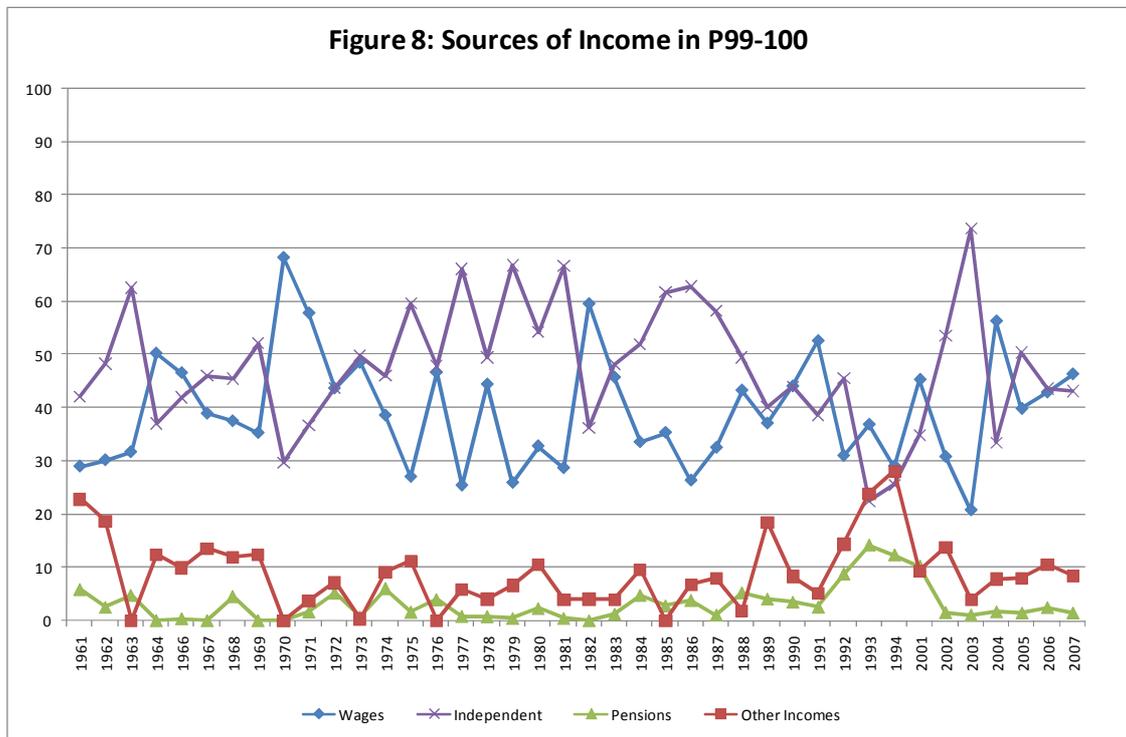
Education

When looking at the data series, we can see two trends that are more or less clear: throughout the period the coverage of secondary education and higher education have increased steadily, but while the category of individuals with tertiary education has been increasing its share among the highest income, the opposite happens with those with only secondary education.

For people with higher education, they went from representing just fewer than 40% of the top decile in 1957 to 80% in 2007, while in this same group the participation of high school graduates fell from an average above 40% in the first years of the sample to average about 20% in the last years of the survey.

The evolution of the presence of these educational groups in percentile 100 is quite similar to that observed in decile 10: the late 50's about 40% of the members of this decile reported to have higher education, but in recent years this group includes more than 80% of the members of this percentile. The story for the group with high school marks a sharp drop in its share of the richest percentile, from about 40% in the first half of the survey to under 10% on average for the decade 1996-2006.

Figure 9: Proportion of Individuals with Tertiary Education

Figure 10: Proportion of Individuals with Secondary Education

Legend: Total, Top 10, Top 1

Gender

Regarding gender differences, the evidence shows that individuals belonging to decile 10, the income gap between men and women had no significant changes between 1957 and 1982, where about 10% of people receiving these high incomes were women. But from that year, a gap between the percentages of women versus men has been declining steadily, reaching a rate of over 30% of this decile.

Figure 11: Proportion of Men and Women in Decile 10
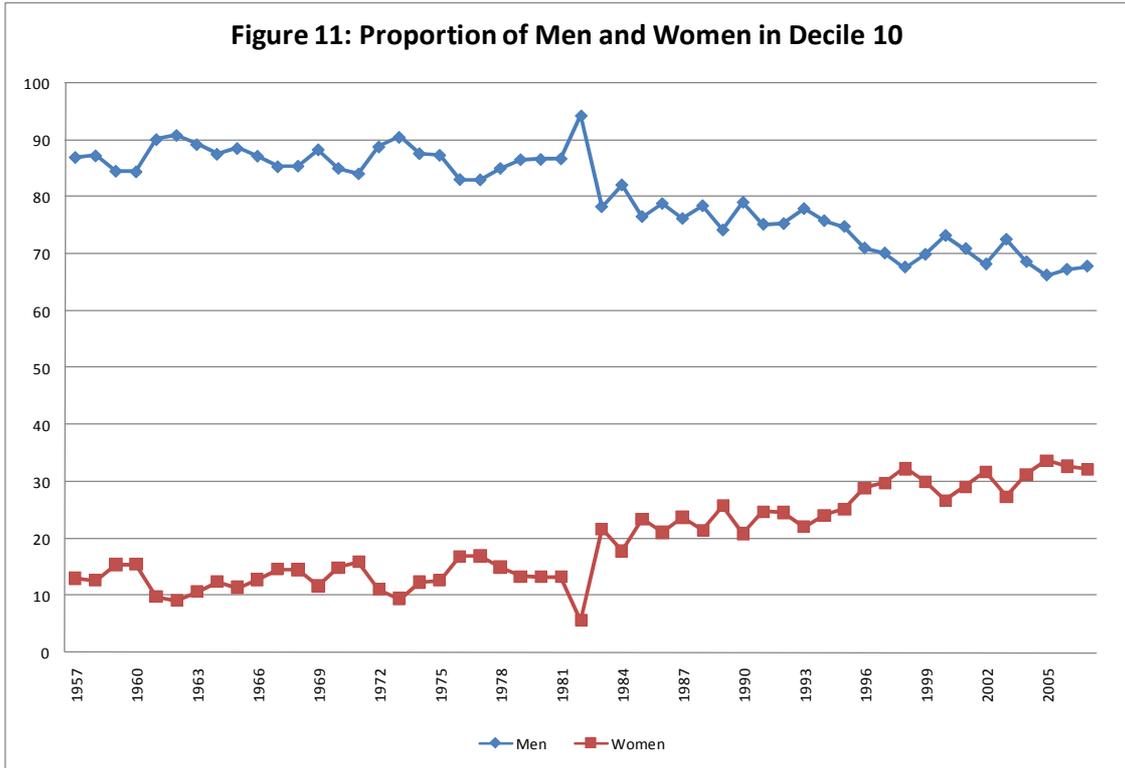
In the case of percentile 100, although this gap has been decreasing since 1982, the increase in the percentage of members of this income group who are women has grown much less than in decile 10. Instead of reaching over 30 to participate in this income group, the average over the last decade is close to 15%.

Figure 12: Proportion of Men and Women in Percentil 99-100
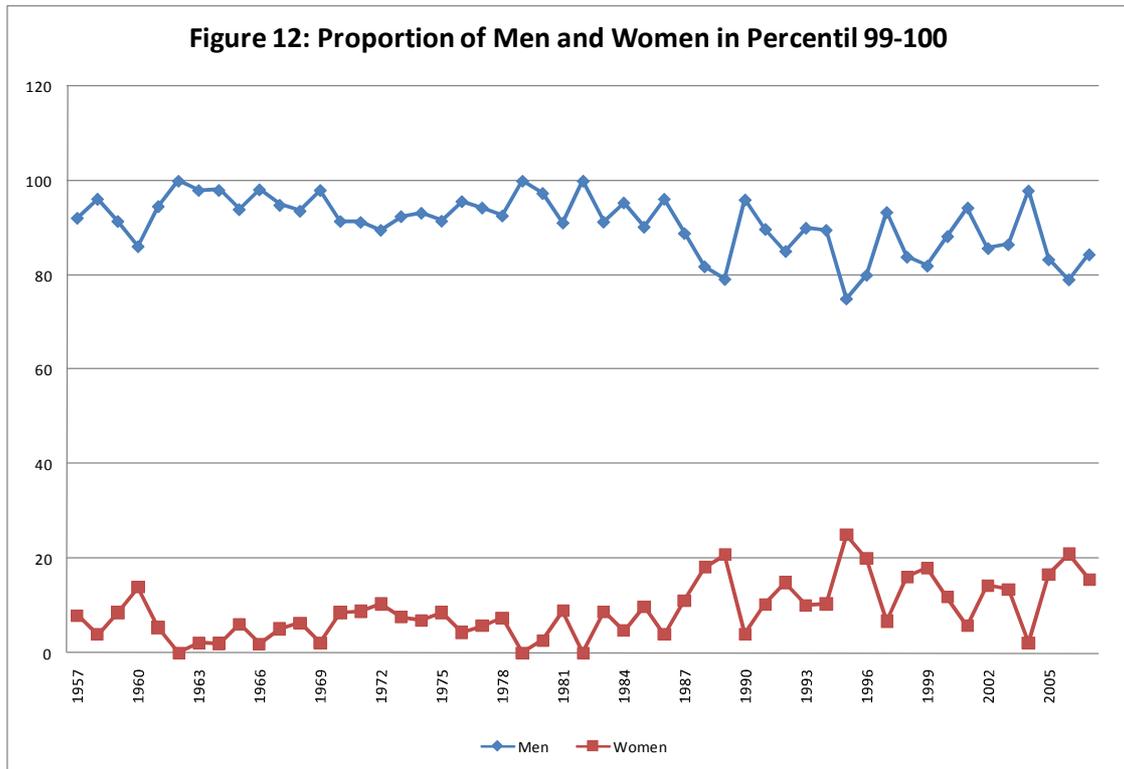
Type of Occupation

As shown in the two graphs of this subsection are three occupational groups in the survey who concentrate most of the composition of these high-income groups: employees, employers and self-employed, so we comment what data shows on the evolution of these three groups.

According to the data, one of the clearest trends is the increase of those who declare themselves employed both in the top decile and the top percentile, especially since the 1990s. In this decade, in case of decile 10, the relative progress of the group of employees corresponds to a slight decline of both the employer declaring group as those classified as self employed persons. For the top percentile variability exists in the 1990s, but it is possible to observe, however, long-term tendency to self-employed workers disappear from the top 1% of income. This decrease in the relative presence of employed

persons is also observable for the series for the decile 10, but the fall is less dramatic. Finally, in the case of the category of employers, they represent about 20% of decile 10 since the mid 70's until 1990, and begin to fluctuate around approximately 13% by the end of the 2000s.

Figure 13: Types of Occupations in Decile 10
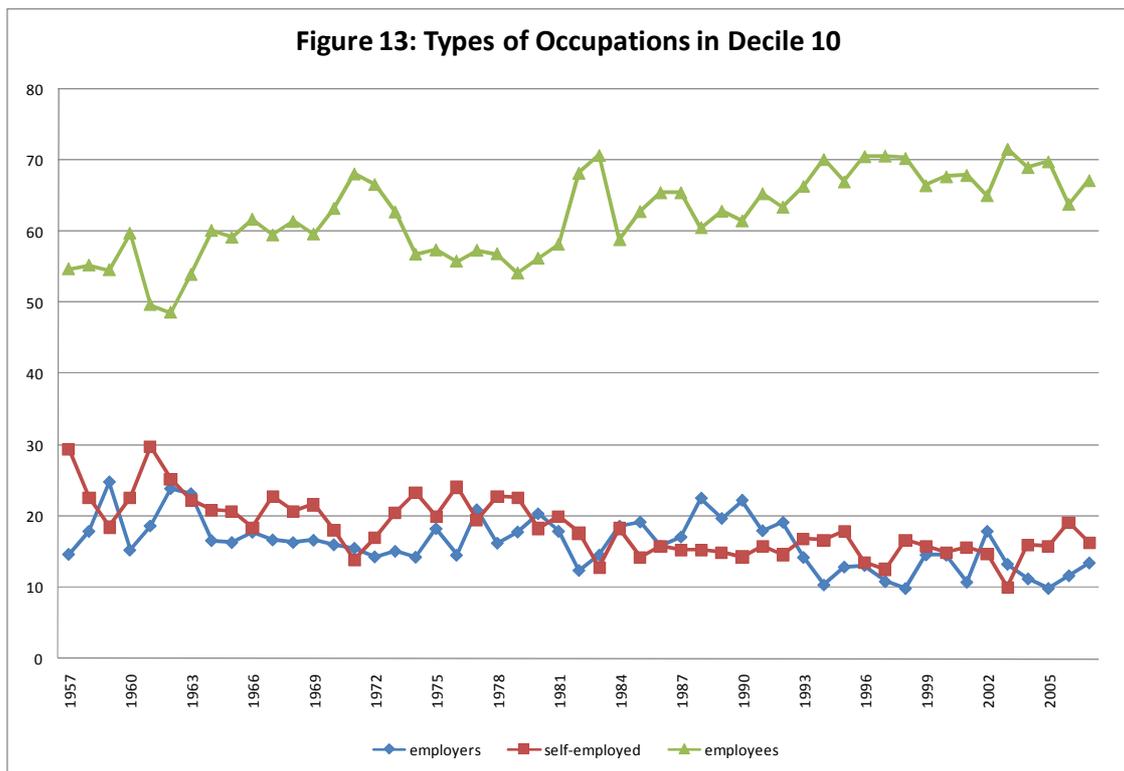
Less clear appears the history of employers in the top 1%, but it is still possible to note that its share amounted to less than 20% in several years after 1990, a phenomenon that occurs only once in history before 1990 and very mild. Also in the period mid-70's to 1989 was common to find that over 40% of members were employers, a phenomenon that occurs much less frequently in the past 16 years of the sample.

Figure 14: Types of Occupations in Percentile 100
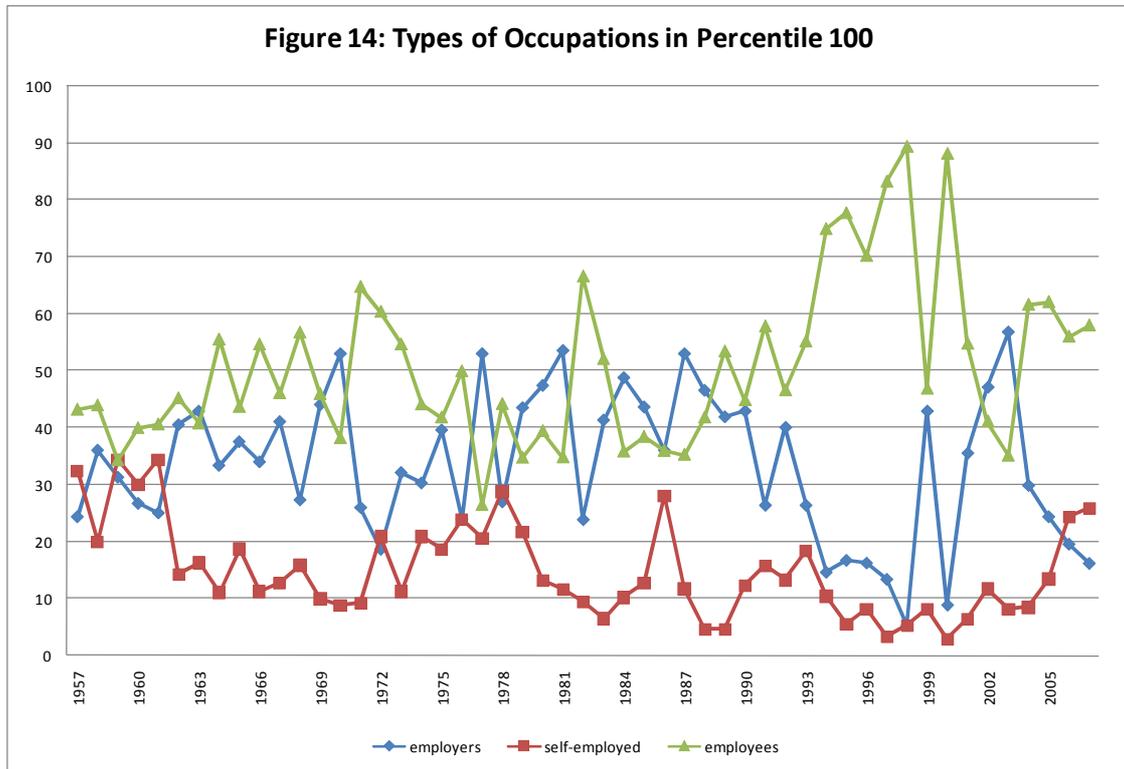
Ratios

The analysis of the relative differences between the highest incomes and middle-income population reveals that this particular measure of inequality itself has undergone changes since 1957 until today. Whether we look at personal income and per capita household income or total family income changes over time is basically the same, relatively low levels and with little variation until 1967, with a moderate increase until 1970 where the distance between these high-income and middle income falls visibly during the Popular Unity government, to begin to grow steadily since 1974, which was accelerated after the crisis of 1982, reaching its peak around 1987, where it begins to fall to achieve some stability in nineties and early 2000s around levels slightly lower than those of the 1980s but still higher than those observed at the beginning of the sample.

If we look specifically at individual incomes, we see that at the beginning of the sample top 1% percentile income was about 13 times the median income. Then down to levels close to 8 times the size of the median income for the first three years of the 70's and still depressed the first year of the dictatorship, to increase rapidly to 1975 have until 25 times the median income in 1981 and 35 times in 1987. The nineties moderated a bit this distance, with ratios around 19 and a further decline apparent towards the end of the sample with ratios closer to 14. However, after 1979 levels seem to fluctuate around levels clearly greater than 1957-1979.

Figure 15: Ratios decile 10 and percentil 100 on median income
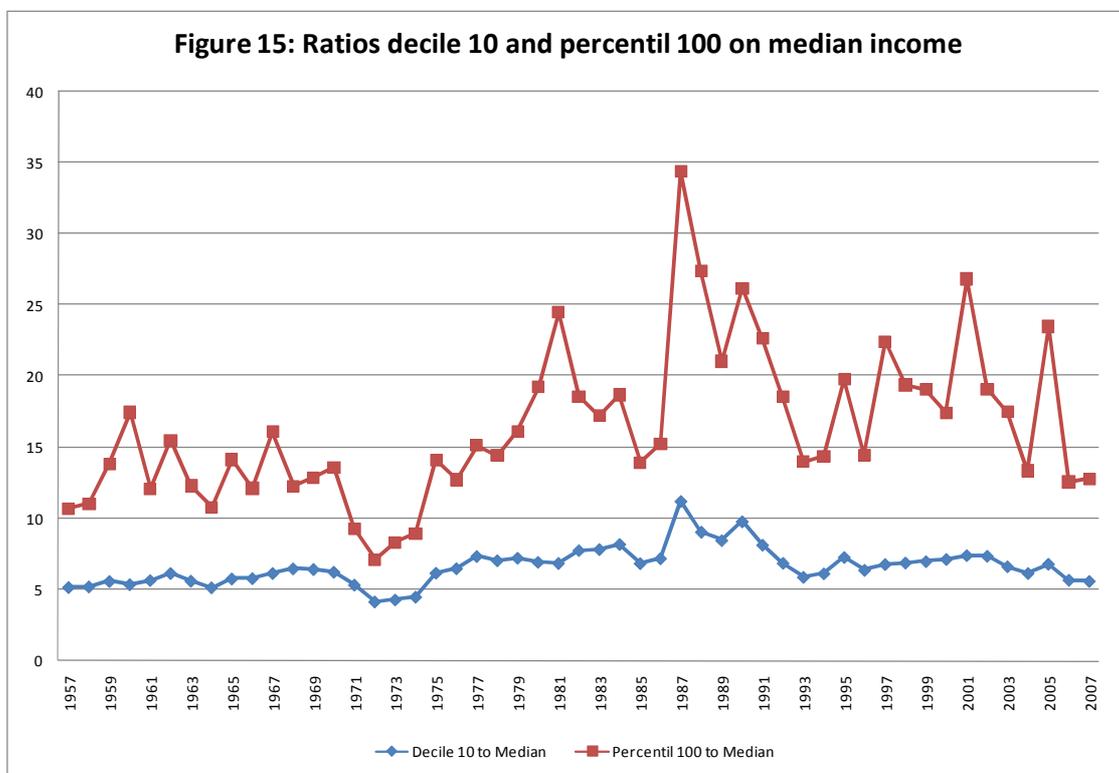
5. Análisis de Movilidad en la parte de Alta de la Distribución

Transition matrices

Table 2 shows transitions between 1996 and 2001. The year 1996 of all households in decile 10, 48.4% of them remained in decile 10 in 2001. And of the households that were not in decile 10 the year 1996, 6.4% arrived to decile 10 in 2001. Transition probabilities for the years 2001 and 2006 are not statistically different. This speaks of little or no change in mobility for this decile. Retention and arrival rates are the same for both periods. Additionally, we noted that retention rate in decile 10 is significantly higher than in the rest of the distribution. In decile 1, for example, between 1996 and 2001, 32.1% remained there, and between 2001 and 2006 the retention rate was 29.7%.

Tabla 2:

Transition Matrices		
	2001	
1996	Decile 1-9	Decile 10
Decile 1-9	93.6%	6.4%
Decile 10	51.6%	48.4%
	2006	
2001	Decile 1-9	Decile 10
Decile 1-9	93.7%	6.3%
Decile 10	52.2%	47.8%

Source: Panel Casen 1996-2001-2006, Household total income.

Regression analysis

Regression analysis aims to identify socio-economic variables that are correlated with the probabilities of stay and arrival in decile 10. To perform this analysis, we use longitudinal data from CASEN Panel Survey 1996-2006, which is the longest survey panel for Chile.

Using data for 1996, 2001 and 2006, we estimate transition matrices for two periods. In addition, two discrete dependent variable models are estimated, identifying variables which correlate with the likelihood of remaining in decile 10 and of arriving to it from somewhere below in the income distribution.

To study retention probabilities, we construct a discrete variable equal to 1 if the household is observed in decile 10 in year t conditional on being in decile 10 in t-1, and 0 if not found in decile 10 in the year t conditional on being in decile 10 in year t-1. This variable is modeled as a function of household characteristics and environment for year t-1, and changes between t-1 and t.

Explanatory variables for both models include household composition, physical capital, human capital, working capital, home environment and shocks. Among shocks, we include health problems, reduction and increasing numbers of people at home.

Table 3, column (1) shows the results for the probability of staying in decile 10. We see that household composition considering children 5 years or less has positive effect. Education plays an important role in remaining in decile 10, and so the education of the household head has a positive effect, like that of a spouse if such spouse has college or graduate studies. The set of work-related variables reveals that people who have a permanent contract are more likely to remain in the decile 10. On the other hand, individuals who have other occupations, in addition to their main one, appear with a negative effect. The proportion of people working at home also plays an important, if there are a greater number of people working, and then the associated staying probability in decile 10 is also greater. When a family faces a shock in household composition, i.e. there is an increase or decrease in the number of members, this also affects staying probabilities. In particular, if the number of member decreases, the staying probability rises, and when the number of members increases, the staying probability falls. In the case where a household member enters the labor market, this is shown to be associated with higher permanence probability of the household in decile 10.

Table 3, column (2) shows the results for the probability of arrival. With respect to the variables correlated with the probability of arrival at the decile 10, the education of the household head as well as the spouse, plays an important positive role, if education levels correspond to higher education or graduate studies. If the family has paid their housing, this found to be is positively correlated with the probability of arriving to the 10th decile.

Just as in the case of permanence in the 10th decile, the proportion of people working at home also plays an important part in arriving at decile 10, i.e., if there is a greater number of people working at home then are more likely to ascend to the top decile. The increase in the number of household members is negatively correlated with the arrival in decile 10. If any household member leaves the labor market, i.e., become unemployed, that fact will have a negative effect on arriving to decile 10. In the other hand, if the proportion of people working increases, this will help significantly and positively to the household in its way to decile 10.

Tabla 3:

Probit regression, reporting marginal effects		
	(1)	(2)
	Permanence	Arrival
Numer of persons in the household	-0.014	-0.007
	(0.011)	(0.001)**
Average age of the household	0.002	0.001
	(0.002)	(0.000)**
Gender of the household head (Men=1)	-0.119	-0.007
	(0.033)**	(0.004)*
Biparental home	-0.008	0.007
	(0.036)	(0.003)*
Proportion of people<=5 años	-0.382	-0.062
	(0.293)	(0.022)**
Proportion of people>=6 & <=15 años	-0.652	-0.057
	(0.273)*	(0.021)**
Proportion of people>=16 & <=65 años	-0.566	-0.022
	(0.284)*	(0.022)
Proportion of people>=66 años	-0.510	-0.028
	(0.304)	(0.026)
Housing ownership	-0.004	0.014
	(0.030)	(0.002)**
Years of Schooling of the head of the household	0.028	0.006
	(0.004)**	(0.000)**
Years of Schooling of the spouse	0.004	0.003
	(0.004)	(0.000)**
Head of the household with University or Postgraduate Education	0.128	0.048
	(0.041)**	(0.013)**
Spouse with University or Postgraduate Education	0.194	0.034
	(0.042)**	(0.014)*
Employer=1	0.075	0.066
	(0.058)	(0.024)**
Self-employed=1	-0.075	-0.008
	(0.046)	(0.003)*
Working in a public firm	0.000	0.016
	(0.056)	(0.008)*
Working in a private firm	-0.005	-0.004
	(0.040)	(0.003)
Permanent contract=1	0.044	0.016
	(0.034)	(0.004)**
Second occupation=1	-0.040	-0.008
	(0.072)	(0.008)
Proportion of people working in the Household	0.237	0.081
	(0.058)**	(0.007)**
Region III	0.191	
	(0.051)**	
Region VII		-0.018
		(0.004)**
Region VIII	0.076	-0.021
	(0.043)	(0.004)**
Metropolitan Region	0.059	0.001
	(0.042)	(0.005)
Urban Zone=1	0.101	0.025
	(0.070)	(0.002)**
Health Problems	0.057	0.008
	(0.029)	(0.003)*
Numer of people in the household decrease	0.163	0.043
	(0.032)**	(0.004)**
Numer of people in the household increase	-0.259	-0.029
	(0.033)**	(0.002)**
Numer of people working in the household decrease	-0.266	-0.019
	(0.031)**	(0.002)**
Numer of people working in the household increase	0.050	0.036
	(0.037)	(0.004)**
Observations	2076	23221

Notes: Standard errors in parentheses. * significant at 5%; ** significant at 1%. Dependent variable of permanence takes value 1 if the household is observed in decile 10 in year t conditional on being in decile 10 in t-1, and 0 if it is not observed in decil 10 in year t conditional on being in decile 10 in year t-1. The dependent variable is a discrete variable that takes the value 1 if the household is observed in decile 10 in year t conditional on not being in decile 10 in t-1, and 0 if not found in decile 10 in year t conditional on not being in decile 10 in year t-1.

6. Conclusions

The study of the top incomes in Chile during 1957-2007 in Chile reveals changes in the shape of income distribution, as well in the occupational composition, gender and educational status of this income group.

Changes in the shape of the distribution can be seen in the evolution of the upper part of the distribution versus the median. The distance between the top decile and the richest percentile from the median has grown less permanently after 1975-1978. In terms of domestic policies that coincide with a large change in the Chilean economic model (trade liberalization, financial liberalization, price liberalization, relative loss of power of unions among other changes). After 1990s there is a decrease of this distance in the final two years of the sample, but we should wait a little longer to confirm if it is relatively permanent. In addition, a significant change in this measure took place between 1970 and 1974, suggesting that this is an aspect of income distribution in Chile that it is sensitive to important changes in the economic model. In a shorter term perspective, we note that top incomes share seems to be countercyclical. This latter feature is similar to what international evidenced has pointed out for developed countries.

The composition of the highest income group has changed to incorporate a greater proportion of women in this group starting from 1982, although this effect is much lower in the richest percentile compared with the full top 10%. There is also a gradual and continuous fall in the fraction of people with secondary education only to be found in the upper tail of the distribution, being replaced by people with higher education. The top 10% of higher income has grown over time the relative importance of the group of employees and the importance of salaries and wages for income decile 10. The top 1% of higher income increase is less noticeable and the category of independent incomes still retains a significant fraction relative to other sources.

With respect to mobility in the top 10% of the income distribution, we detected no

changes in our measurements in the decade 1996 to 2006. The probabilities of arrival and departure of this decile are basically the same as in 1996-2001 as in 2001-2006. In each of these periods there is relative stability: high probability of remaining in the top decile and low probability of reaching this decile. A person who was part of this decile in 1996 was about 50% chance of continuing in this income group and 5 years after the same is true of someone who in 2001 belonged to this group. In contrast, the probability of arrival in that income group is close to 6%. To get a perspective, the probability of remaining in the bottom decile is approximately 30%.

Among the variables most correlated with the probability of stay and arrival in the richest decile of the population are observed the possession of physical assets such as housing, graduate studies, the proportion of working household members and workers with permanent contracts.

Future research should incorporate the analysis of other surveys such as CASEN, the Financial Survey and Survey of Social Protection. Also, we do not rule out the possibility of incorporating administrative data from tax.

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